

IN THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A system for generating hydrogen gas for use in a fuel cell, comprising:
 - a powder metal hydride source;
 - a water heat source arranged to vaporize a source of water into a source of steam;
 - a mixing device capable of mixing the powder metal hydride and steam; and
 - a catalytic hydrogen generating chamber.
2. (Currently Amended) A method of generating hydrogen for use in a fuel cell, comprising the steps of:
 - providing a source of dry metal hydride fuel;
 - providing a source of heat arranged to vaporize a source of water into steam;
 - providing a mixing chamber operably connected to the source of dry metal hydride fuel and the source of steam;
 - transporting dry metal hydride fuel and steam into the mixing chamber to initiate a hydrogen-producing reaction;
 - removing a dry metal powder byproduct from the mixing chamber; and
 - removing hydrogen from the mixing chamber.
3. (Original) The method of claim 2, wherein the mixing chamber comprises a screw drive transporter connected at a first end to the source of dry metal hydride fuel.
4. (Currently Amended) The method of claim 3, wherein the screw drive transporter mixing chamber is connected at a second end to the source of steam.
5. (Currently Amended) The method of claim [[4]] 3, further comprising the

step of operating the screw drive to transport the dry metal hydride fuel from the first end to [[the]] a second end.

6. (Currently Amended) The method of claim [[5]] 4, further comprising the step of feeding steam into the screw drive transporter mixing chamber at the second end to pass through the metal hydride fuel toward the first end.

7. (Currently Amended) The method of claim 3, wherein the screw drive transporter mixing chamber is further connected at the first end to the source of steam.

8. (Canceled)

9. (Currently Amended) The method of claim [[8]] 5, further comprising the step of feeding steam into the mixing chamber at the first end to pass through the metal hydride fuel toward [[the]] a second end.

10. (Original) The method of claim 2, wherein the dry metal hydride fuel is selected from the group consisting of calcium hydride, lithium hydride, lithium borohydride, magnesium hydride, sodium hydride and sodium borohydride.

11. (Currently Amended) A method of generating hydrogen for use in a fuel cell, comprising the steps of:

providing a source of dry metal hydride fuel selected from the group consisting of calcium hydride, lithium hydride, lithium borohydride, magnesium hydride, sodium hydride and sodium borohydride;

providing a source of steam;

providing a mixing chamber operably connected to the source of dry metal hydride fuel and the source of steam;

transporting dry metal hydride fuel and steam into the mixing chamber to initiate a hydrogen-producing reaction;

removing a dry metal powder byproduct from the mixing chamber; and

removing hydrogen from the mixing chamber:

~~The method of claim 10, wherein the mixing chamber comprises a screw drive transporter [[is]] coated with a catalyst for initiating the reaction between the steam and the dry metal hydride fuel.~~

12.-14. (Canceled)

15. (New) The system of claim 1 wherein the mixing device and the catalytic hydrogen generating chamber comprise a single chamber coated with a catalyst for simultaneously mixing and reacting the powder metal hydride and steam to produce hydrogen gas.

16. (New) The system of claim 1 wherein the mixing device and the catalytic hydrogen generating chamber comprises a screw drive transporter coated with a catalyst.

17. (New) The system of claim 1 wherein the mixing device comprises a screw drive transporter connected at a first end to the powder metal hydride source and at a second end to the source of steam, wherein the screw drive is arranged to transport the powder metal hydride from the first end to the second end, and the steam is arranged to feed into the second end to pass through the powder metal hydride toward the first end such that the steam reacts with the powder metal hydride to produce hydrogen gas.

18. (New) The system of claim 1 wherein the mixing device comprises a screw drive transporter connected at a first end to the powder metal hydride source and the source of steam wherein the screw drive is arranged to transport the powder metal hydride from the first end to the second end, and the steam is arranged to feed into the first end to pass through the powder metal hydride toward the second end such that the steam reacts with the powder metal hydride to produce hydrogen gas.

19. (New) The system of claim 1 wherein the heat source is provided by heat

generated in the catalytic hydrogen generating chamber.

20. (New) The system of claim 1 wherein the powder metal hydride source is selected from the group consisting of calcium hydride, lithium hydride, lithium borohydride, magnesium hydride, sodium hydride and sodium borohydride.

21. (New) The method of claim 2 wherein the source of heat is provided by heat generated in the hydrogen-producing reaction.

22. (New) The method of claim 11 wherein the source of steam is provided by using heat generated in the hydrogen-producing reaction to vaporize a source of water into steam.